

Tapes for measuring Mid Upper Arm Circumference (MUAC)

Professor David Morley, TALC, Po.O. Box 49, St Albans, AL1 5TX, UK
david_at_morleydc.demon.co.uk

At a time when food is in short supply it is essential to have a simple method of identifying malnourished young children. The mid upper arm circumference (MUAC) of children aged 6 – 59 months gives an indication of the degree of wasting and is a good predictor of mortality. Research shows that it is equally good, if not better, than other measurements for screening young children and selecting those needing therapeutic feeding¹.

The MUAC tape (see figure) is a simple and reliable method of assessing MUAC and can, with training, be used by all level of health workers.

Teaching-aids At Low Cost (TALC) has been producing MUAC tapes for over 10 years and they have stood the test of time, with over a quarter of a million having been distributed. They are made from plasticized paper and are almost indestructible.

The tapes show colour-coded cut-off points indicating various levels of malnutrition for young children, and, on the back, suggest cut-off levels to identify at-risk pregnant women and adults with HIV/AIDS and/or tuberculosis.



The TALC MUAC tape and how to use it

References

1. Myatt Mark, Khan Tanya, Collins Steve. *A review of methods to detect severe malnutrition in the community for their admission to community based therapeutic feeding centres* Food and Nutrition Bulletin 2006 No3 supplement The United Nations University

MUAC – how to measure and when use it ^{1,2}

How to measure MUAC



MUAC is the circumference of the left upper arm and is measured at the mid-point between the tips of the shoulder and elbow. To measure:

1. Bend the left arm, find and mark with a pen the olecranon process and acromium.
2. Mark the mid-point between these two marks.
3. With the arm hanging straight down, wrap a MUAC tape around the arm at the midpoint mark.
4. Measure to the nearest 1 mm.

It is easy to measure MUAC even on very thin arms.

When to use MUAC

The major determinants of MUAC are muscle and sub-cutaneous fat, both important determinants of survival in malnutrition and starvation. MUAC is less affected than weight and height based indices (e.g. Body Mass Index) by accumulation of fluid (i.e. nutritional oedema, peri-orbital oedema and ascites). So MUAC is a good predictor of mortality. It is recommended for identifying young children with, or at risk of, severe acute malnutrition and adults with acute energy deficiency.

In children 6-59 month old, MUAC <110 mm indicates severe acute malnutrition and is recommended as a criterion of admission to therapeutic feeding programmes. Values between 110 and 120/125 mm

indicate moderate malnutrition. Values below 250 mm in adults indicate severe wasting. More detailed cut-off values for young children are at <http://www.who.int/childgrowth/standards/en>

Note that MUAC is not sensitive enough to routinely monitor growth at young child clinics.

The MUAC Community Website <http://tng.brixtonhealth.com>

The MUAC Community Website is a free and open site for the dissemination and discussion of issues related to the use of mid-upper-arm circumference (MUAC) including, but not restricted to, case-definitions, surveys, and patient monitoring. Anyone can view the stories and comments on the site and view / download files attached to stories. Authenticated users can create, edit and delete their own stories, attach files to them, and comment on their own and other's stories.

References

1. United Nations System Standing Committee On Nutrition, Task Force On Assessment, Monitoring, And Evaluation, Fact Sheets On Food And Nutrition Security Indicators: *Mid-Upper Arm Circumference* SCN News Update March 2008 www.unsystem.org/scn
2. Notes from *The MUAC Community Website* <http://tng.brixtonhealth.com>
Image of TALC tape from <http://tng.brixtonhealth.com>

*MUAC straps are also available from Valid International Ltd. and can be delivered by courier directly to UNO, NGO, and MoH country offices. For prices and details email office@validinternational.org